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A United States Custom House

Architecture

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A UNITED STATES CUSTOM HOUSE

BY

JOSEPH COLBY NELSON

THESIS

FOR THE

DEGREE OF BACHELOR OF SCIENCE

IN

ARCHITECTURE

COLLEGE OF ENGINEERING

UNIVERSITY OF ILLINOIS

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JUNE 1st 1912.

THIS IS TO CERTIFY THAT THE THESIS PREPARED UNDER MY SUPERVISION BY

JOSEPH COLBY NELSON

ENTITLED A UNITED STATES CUSTOM HOUSE

IS APPROVED BY ME AS FULFILLING THIS PART OF THE REQUIREMENTS FOR THE

DEGREE OF BACHELOR OF SCIENCE IN ARCHITECTURE

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A UNITED STATES CUSTOM HOUSE

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A UNITED STATES CUSTOM HOUSE

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INTRODUCTORY

Government work has always appealed to me as an architecture characteristic of our Americanism -- in most cases straightforward, simple, dignified and refined and never resulting in impossible design. It offers a splendid opportunity for a combination of good American design with solid construction. For these reasons, after looking over the library to see what type of government building gave best scope to the designer, both as to elevation and plan, but mostly plan, a United States Custom House seemed to me to offer the best opportunity. Custom House designs have been made by our foremost government architects and by these outside constant government employ, and in most cases, in modern times, have been the results of well-regulated competitions.

DEFINITION OF A CUSTOM HOUSE

It. dogana; Sp. aduana; Fr. douane; Ger. Zollhaus.

The following are definitions of custom house taken from Architectural Encyclopedias.

(a) "A custom house is an establishment where commodities are entered for importation or exportation; where duties, bounties, or drawbacks, payable or receivable upon such importation or exportation are paid or received, and where ships are entered and cleared."

(b) "A custom house is a building intended for the examination of goods passing the frontier of a country or of a town, and for receiving the duties imposed thereon. It should contain large warehouses for examination, weighing and storage of merchandise, with proper cranes, lifts, etc.; waiting rooms, rooms for clerks, comptrollers, commissioners, etc. According, therefore to the importance and wealth of a city the building to receive it is of commercial importance."

From the magnitude of daily operations, some custom houses, especially in England and the United States are more the offices of the authorities and their clerks than places for inspection and temporary detention. Probably a better definition for a modern United States custom house would be a building in which are offices for the reckoning and calculation of customs duties. The modern Custom House has developed into a building of great size and complexity of plan and we might call it an up-to-date government office building.

To this latter class belongs the Custom House as set forth in this Thesis.

HISTORICAL SKETCH

Custom Houses are now built by all the great commercial nations in their principal seaports. Customs duties rank among the most ancient, as they continue to prevail, as one of the most common modes, in all countries, of levying revenue for public purposes. It is the most satisfactory way of obtaining revenue and is more popular with the people than property taxation of so much a year paid in a lump sum. Hence the importance of establishment of modern custom houses. In an insular country like the United Kingdom customs duties came in process of time to be levied only, or chiefly, in the seaports, and this applied only to foreign commerce, when they may be brought under the control of fair and reasonable principles of taxation. But this simplification of customs duties was only reached by degrees; and during a long period special customs even levied on goods passing between England and Scotland and also with Ireland. In Great Britain, Germany and Austria, only specific duties prevail, and the tariffs in France and Italy show very few ad valorem rates. Ad valorem rates are more abundant in the United States. It may be of interest here to note that specific rates are duties levied per pound, per yard, per ton, etc. Ad valorem duties are those levied according to the estimated value of the goods.

In the United States the large warehouses for storage and detention of goods are separate buildings from the custom house in which are the various departments with their heads, clerks and computing officers. The call room alone in the modern custom house is the place for calling for one's packages, but only small and valuable packages are handled here and is principally the public place for entries.

One of the oldest custom houses erected was the Dogana of Venice, The Custom House at Dublin, Ireland by James Gandon and the one in London, England, are good examples of modern foreign buildings. In the United States the

principal custom house is in New York and designed by Cass Gilbert. Other good and modern examples are, the new Baltimore Custom House, and the ones at Cleveland, Indianapolis and San Francisco. The last three mentioned are designed in connection with the United States Postoffice and Court House.

METHOD OF STUDY

The first two months of Thesis study were spent in looking up good examples of Custom Houses and parallel buildings in the Library. Many free-hand sketches were made of these various elevations and places. The object of these references and sketches was to become acquainted with the problem in hand -- to see how others had solved similar problems. Most of the time thus spent was given to study of plans -- in studying circulation, arrangement of rooms, connective, proportion and expression.

After the sketch stage came small scale free-hand designs, which were worked over and over in order to discover the merits of each and every idea that came to the mind. These small scale studies were later drawn in ink and simply rendered to bring out any radical mistake in the design. Through a progression of small sketches and rendered studies with criticisms, the design at last began to take on satisfactory form, and one scheme was selected and adhered to, to be further studied and developed until a change to a larger scale drawing was warranted. Up to this period of the design, study was restricted to simplicity and expression of plan with its corresponding elevation, but now, at larger scale, detail was to be considered, and inspiration was received from many fine examples of government work by leading architects as published in architectural magazines and treatises. The final drawings are a result of corrections and refinements upon the selected scheme of procedure.

REQUIREMENTS

GENERAL:-

The building to be designed to meet the requirements as stated below.

The character of the building should be impressive, dignified and refined. The motive of design should be to attain a scale and a simplicity of elevation suitable to the material used. The building is to be fireproof in every way.

SITE AND DIMENSIONS:-

The site is a level rectangular lot, about 175' 0" X 250'0", the 175 foot length being the important facade and facing an important street or avenue. One adjacent long facade to face on another street, and the other to face a city park. An alley is to be in rear of building.

The building is to be six stories in height -- a basement, main floor, three office floors and an attic.

REQUIREMENTS OF BUILDING:-

Three main entrance doors should be provided on the main facade and two on the street side.

Enough passenger and freight elevators should be provided to insure ample communication between the floors from basement to attic. Ample stairways should also be provided, both main and service stairways.

While there is no particular limit of cost it is estimated that this building should cost about one million dollars.

BASEMENT:-

The basement should comprise:

Boiler room

Ventilating room

Coal stowage

Supply stowage

Repair room

Janitor's quarters

Toilets, etc.

MAIN or FIRST FLOOR:-

On the main floor will be found:

Call room - - - - - - - - - - -	6480	sq. ft.
Sub-treasury and Cashier (with vaults) - -	3600	" "
Auditor's Office - - - - - -	900	" "
Statistical office - - - - -	900	" "
Inspector's Office with anterooms -	2280	" "
Liquidating Office - - - - -	900	" "
Impost and Drawback - - - - -	900	" "
Surveyor's Office - - - - - -	500	" "
Hydrographic office- - - - -	500	" "
Collector's Office - - - - -	500	" "
Special Deputy Collector - -	500	" "
Naval Officer - - - - - - - -	500	" "

SECOND FLOOR:-

On the second floor will be found offices for:-

Merchants) Brokers) - - - - - - - - -	2200	sq. ft.
Coast office rooms - - - -	1800	" "
Coast bond officer - - ---	900	" "
River inspector - - - - - -	900	" "
Landing waiter - - - - - -	500	" "
Coast waiter - - - - - - -	500	" "
Minute Clerks - - - - - -	500	" "

Clerk of papers - - - - - - - 500 sq. ft.

Clerk of petitions - - - - - 500 " "

Clerk of messengers - - - - 500 " "

Landing Surveyor - - - - - 500 " "

Tide Surveyor - - - - - - - 500 " "

Cougers - - - - - - - - - - 500 " "

Searchers - - - - - - - - - 500 " "

Clerks and stenographers

THIRD AND FOURTH FLOORS :-

General and minor offices with large clerical forces.

ATTIC FLOOR :-

Stowage of records, old papers, etc.

DISCUSSION OF DESIGN

PLAN:--

Most attention was given to the designing of the first or main floor and second floor because of the importance of these floors, especially the main floor, with which the general arrangement of the other floors have to correspond. In elevation an attempt was made to express the importance of the main floor and the more general office use of the succeeding floors.

Directly opposite the main entrance doors is the entrance to the most important room of the design, the Call Room. This room is 120' 0" X 56'0" and is 40' 0" in height, running through two stories and core vaulted with a large sky-light in center of ceiling. It has the appearance of a banking establishment, the floor space being divided off by a bronze screen with marble wainscot, and the center of the room has writing tables, similar to check-desks, for the public. The walls are treated with a succession of arches on engaged Corinthian columns, the semi-circular heads of the arches being glazed for indirect lighting of the second floor corridor. The finish of this room should be of rubbed marble and with marble floor laid in attractive pattern. All wood finish should be of oak. The spandrels of the arches and the core of the ceiling offer fine opportunities for mural decoration.

In functional importance, secondary only to the Call Room, is the Sub-Treasury or Cash Room, as it is sometimes called. It is 120' 0" X 30' 0" and takes up the street side of the main floor between the side entrances. Three doors open from it into the long 10' 0" corridor and a public space and ante-rooms are provided. The story height here is 18' 0", as is that of the entire main floor, with the exception of the Call Room. The Sub-Treasury is the cashier's headquarters and has two vaults in connection with it.

The other offices are arranged according to their size and importance, most of them having a public space or with ante-rooms.

The whole interior, especially the Call Room, has been studied with a view to making it ornate but at the same time simple -- no crudity, cheapness, or haphazard effects. The proportion of all parts was kept in mind, -- heights of ceilings in keeping with size of rooms, halls with proper relation of door and window openings, and the material made to express their inherent character.

Two main stairways are placed in the wide front corridor with two service stairways in rear from the main floor to the fifth. These with the eight elevators render ample service between the floors at all times. The modern stairways, while they still often remain a feature of a floor plan, are more or less of an emergency communication, the elevators being used altogether. One big elevator at the rear is intended for freight service, all the others being used for passengers.

ELEVATION:--

As stated before, the exterior has been designed with a view to expressing the importance of the main floor and the more general office purposes of the other floors. This has been attempted by giving more height to the first story and keeping it individual by simplicity of wall treatment, and by tying in the other stories with the Ionic order which consists of three-quarter engaged columns on the principal facade and of the one-quarter pilasters on the two long facades. The attic is not indicated except by a low Mansard roof and is lighted by skylights. This roof will scarcely appear in perspective. Vermont blue granite has been chosen as the most suitable stone for the exterior with possibly a polished granite base course. The central motif on the principal facade has been broken out so as to express the importance of the rooms behind and the inner court which runs up from the sky-light of the Call-Room. The long corridors are marked by the piers which encase the order and by the scale of the windows placed therein. The basement story is mostly below the sidewalk level and on the two adjacent street facades a balustrade has been

provided about ten feet from the wall line to allow for lighting by light-wells. For the convenience of the public, for a Custom House is a public service building, two entrances have been placed on the long street façade, and three entrances with bronze doors mark the entrance on the principal or avenue façade. The statues that flank the main and side entrance doors and surmount the entablature over the columns of the main facade have been designed and placed in order to give scale to the building as well as to enhance its appearance and suggest its character.

DISCUSSION OF CONSTRUCTION:--

The exterior walls of this building are of masonry construction and the main partitions are of skeleton steel with hollow tile. Steel columns and beams with terra cotta floors make up the rest of interior construction. All interior piers, pilasters, columns, and doorways of main floor are intended for marble finish. All corridors and main stairways also should be of marble. The entire main floor to be of tile. All interior wood trim and finish should be of oak.

B I B L I O G R A P H Y

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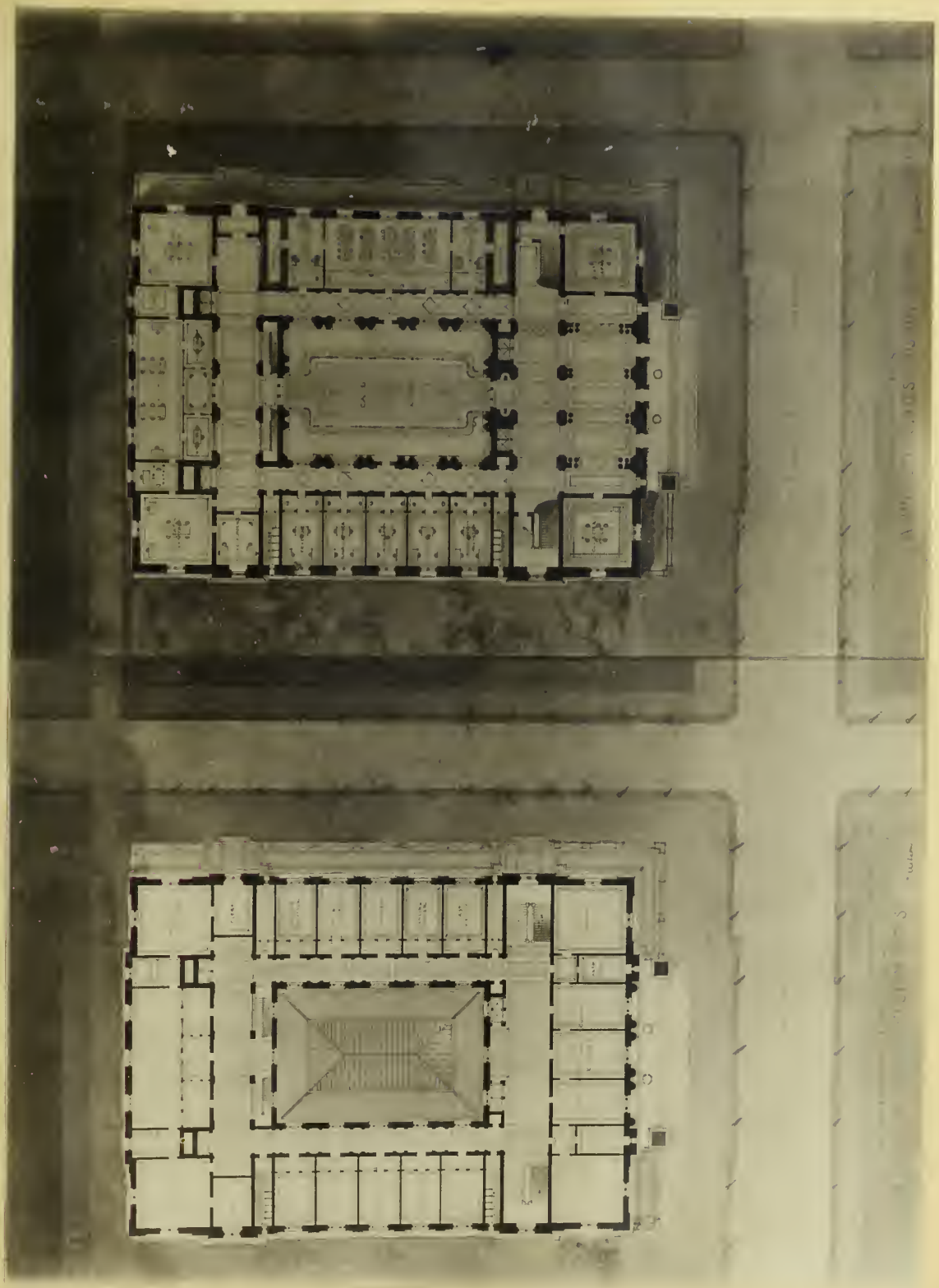

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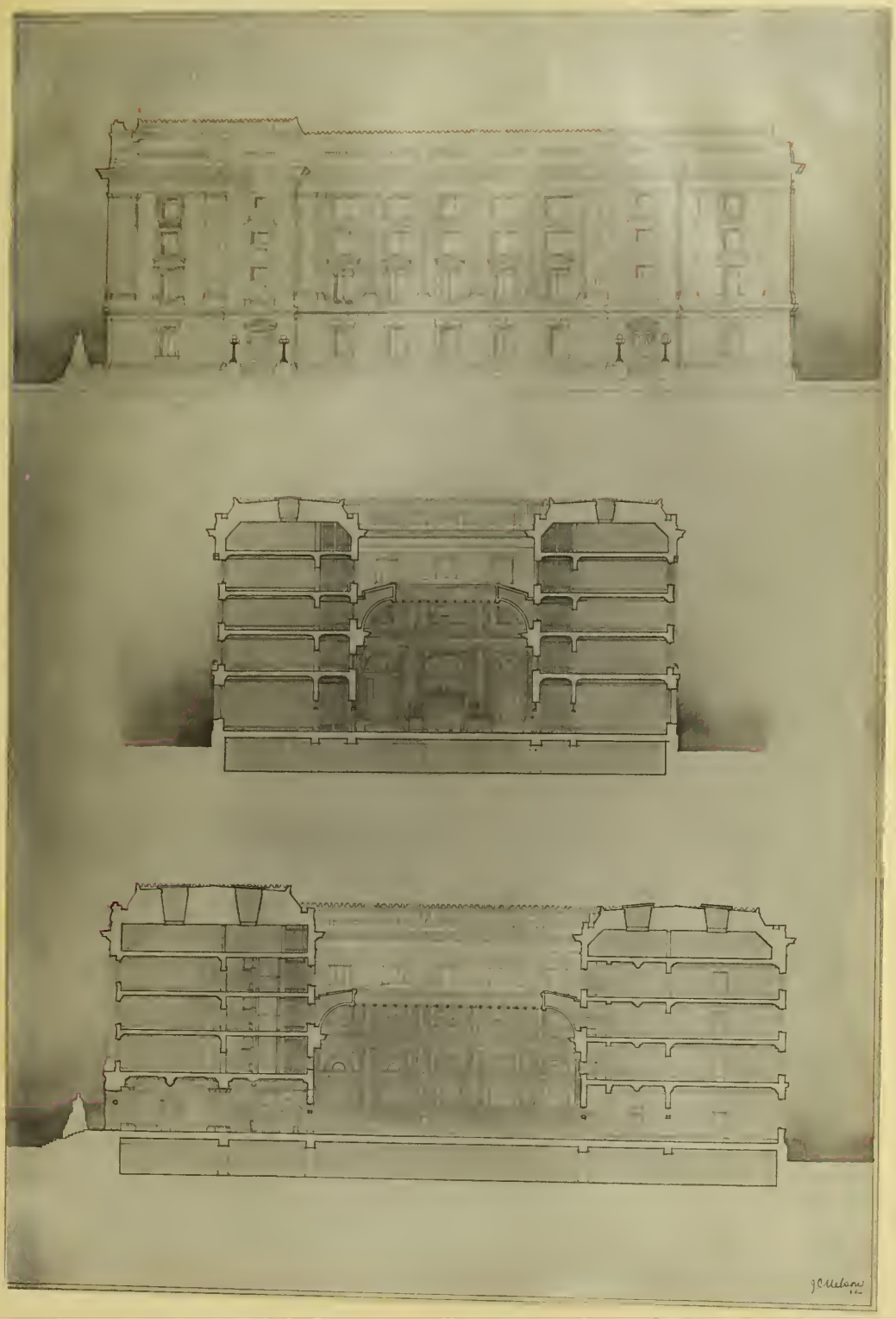

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